

## **2017 Missouri Wild Turkey Brood Survey Results**

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The Missouri Department of Conservation (MDC) has conducted a wild turkey brood survey annually since 1959. During the survey, MDC staff and citizen volunteers record turkey observations during June, July, and August to determine the success of the hatch. Data are collected at the county level and reported statewide and by Turkey Productivity Region, which are counties grouped by similar land cover composition (Figure 1). Each year, thousands of citizens participate in the survey and we are grateful for their contribution. The turkey brood survey provides important information for the Conservation Department's Wild Turkey Management Program, and the large number of turkey observations obtained during the survey would not be possible without the dedication of our citizen volunteers.

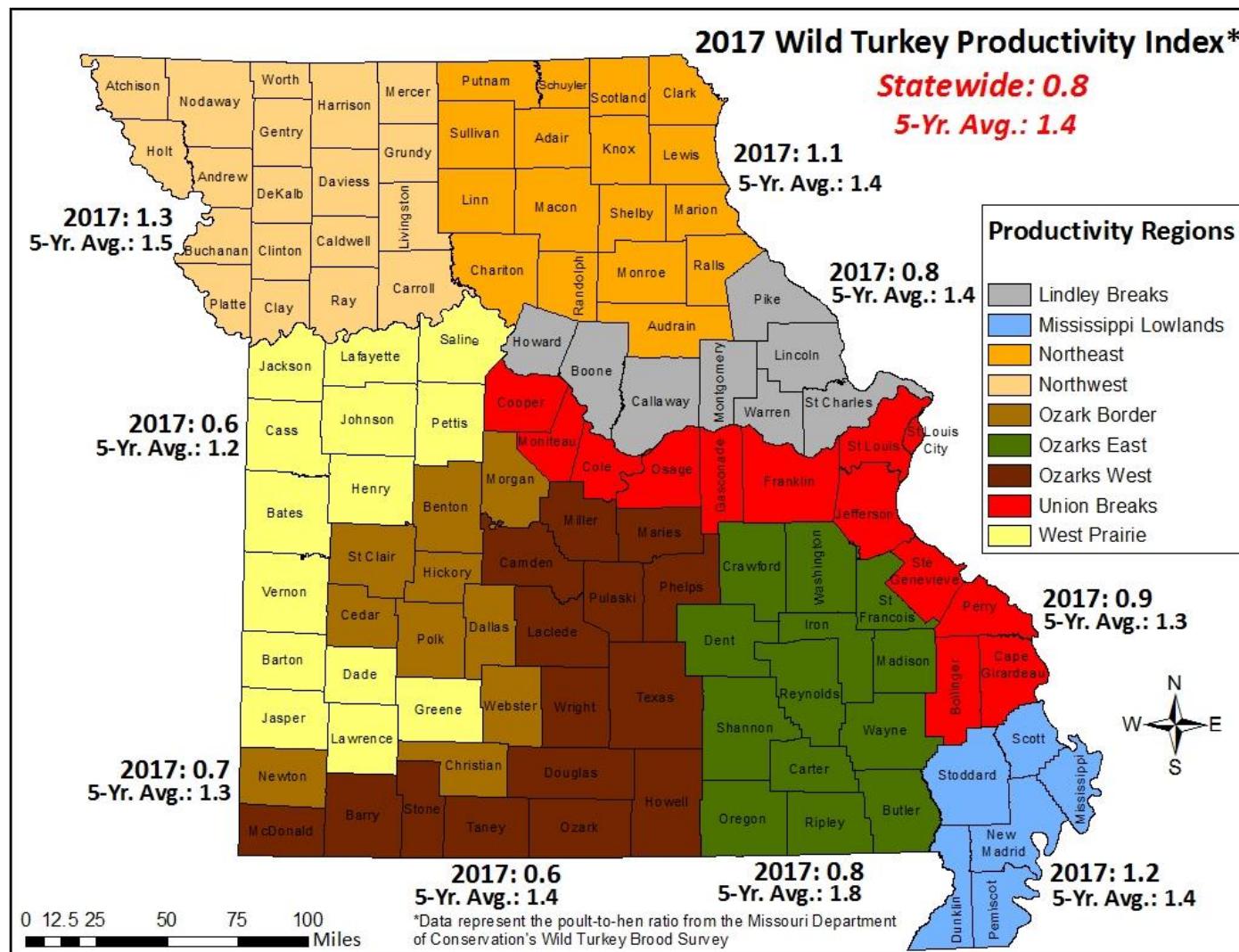
In 2017, nearly 61,000 turkeys were observed during the brood survey. This year's statewide poult-to-hen ratio (PHR) was 0.8, which was the same as the 2016 ratio and 43% less than the previous five-year average (Figure 1, Table 1). This year's PHR was 39% less than the 10-year average and 50% less than the 20-year average (Table 1). Poult-to-hen ratios this year ranged from 0.6 in the Ozarks West and West Prairie to 1.3 in the Northwest (Figure 1, Table 1). Compared to the five-year averages, PHRs were lower in all regions, ranging from 11% below the average in the Northwest to 57% below the average in the Ozarks West (Figure 1, Table 1).

During this year's survey, 27% of hens were observed with a brood, which is down from 29% in 2016, and 33% less than the five year average. Regionally, the percentage of hens observed with a brood ranged from 20% in the Ozarks West to 40% in the Mississippi Lowlands

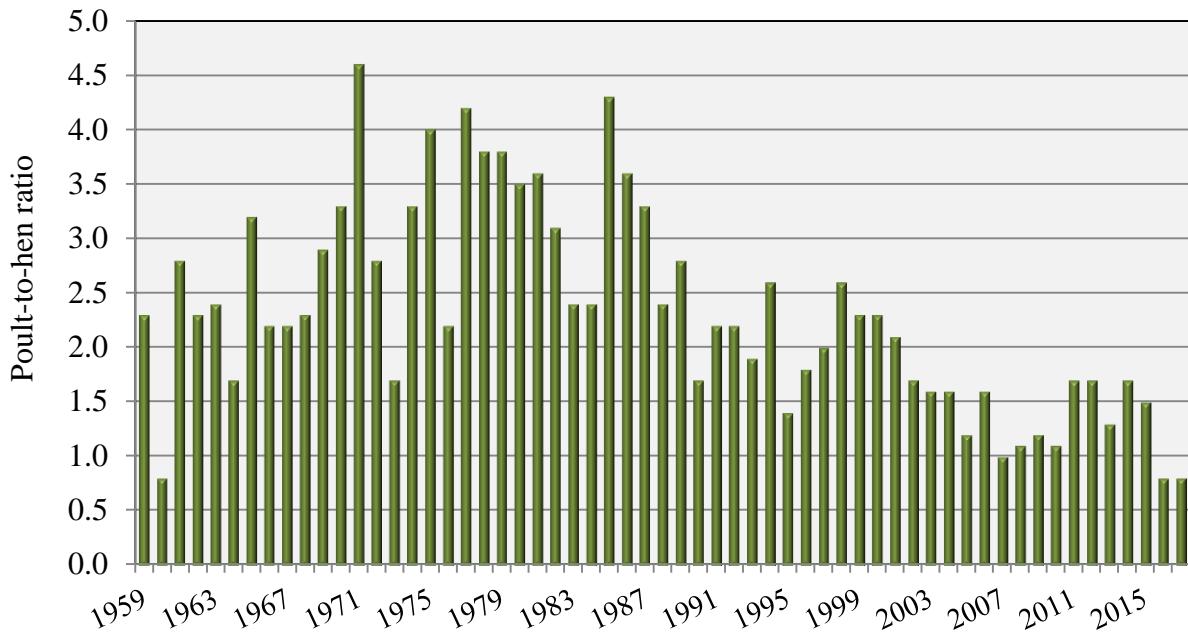
(Table 2). For hens that were observed with a brood, the statewide average brood size was 3.5, which is the same as in 2016 and 13% less than the five-year average. The average brood size ranged from 3.2 in the Lindley Breaks to 4.1 in the Mississippi Lowlands (Table 2).

Poor production throughout the state will make fall turkey hunting in Missouri challenging this season. Juvenile turkeys are typically the most vulnerable and easiest to lure in with turkey calls during the fall season. Therefore, having fewer young birds on the landscape will likely result in hunters having to put forth more effort to be successful. This will be especially true in areas that experience good acorn production. Where acorns are abundant, turkeys spend more time in forested areas and do not have to range far to locate food, both of which typically result in reduced turkey harvest.

Throughout most of Missouri, turkey numbers have been stable during the last five years and remain below the peak numbers that occurred during the late 1990s and early 2000s when the statewide PHR was at least 2.0 for five consecutive years (Figure 2). From 2007–2010, Missouri's turkey population experienced four consecutive years of poor production, which resulted in declines in turkey numbers throughout the state. Turkey production was considerably improved during 2011, 2012, and 2014, which helped to stabilize or increase regional turkey numbers. Although statewide production was fair in 2015, last year's hatch was especially poor, resulting in a 2016 fall turkey harvest that was well-below average. With another poor hatch in 2017, this year's fall harvest is expected to be below-average as well.



**Figure 1.** Index (poult-to-hen ratio) of Missouri wild turkey production by Turkey Productivity Region. Data were obtained during the Conservation Department's 2017 Wild Turkey Brood Survey and are compared to the previous five-year averages.



**Figure 2.** Statewide wild turkey productivity index (poult-to-hen ratio) in Missouri based on observations during the Conservation Department's Wild Turkey Brood Survey, 1959–2017.

**Table 1.** Index (poult-to-hen ratio) of Missouri wild turkey production by Turkey Productivity Region (Figure 1). Data were obtained during the Conservation Department's Wild Turkey Brood Survey in 2017 and are compared to the previous year and the average for periodic intervals.

Productivity Region	2017 Index	1-year (2016) Change	5-year (2012–2016) Change	10-year (2007–2016) Change	20-year (1997–2016) Change
Lindley Breaks	0.8	-11%	-43%	-42%	-54%
Mississippi Lowlands	1.2	-8%	-17%	-20%	-44%
Northeast	1.1	+38%	-20%	-15%	-29%
Northwest	1.3	+44%	-11%	+1%	-21%
Ozark Border	0.7	-22%	-47%	-42%	-56%
Ozarks East	0.8	-11%	-55%	-51%	-57%
Ozarks West	0.6	-33%	-57%	-54%	-61%
Union Breaks	0.9	+13%	-33%	-31%	-43%
West Prairie	0.6	-25%	-48%	-44%	-58%
<b>Statewide</b>	<b>0.8</b>	<b>No change</b>	<b>-43%</b>	<b>-39%</b>	<b>-50%</b>

**Table 2.** Data obtained during the Missouri Department of Conservation's Wild Turkey Brood Survey, listed by Turkey Productivity Region (Figure 1), 2017.

Productivity Region	% Hens w/ Brood	Average Brood Size	Poult-to-Hen Ratio	Gobbler-to-Hen Ratio
Lindley Breaks	32%	3.2	0.8	0.53
Mississippi Lowlands	40%	4.1	1.2	0.86
Northeast	35%	3.7	1.1	0.59
Northwest	36%	4.0	1.3	0.67
Ozark Border	23%	3.5	0.7	0.86
Ozarks East	27%	3.4	0.8	0.67
Ozarks West	20%	3.5	0.6	0.82
Union Breaks	30%	3.4	0.9	0.56
West Prairie	23%	3.6	0.6	0.78
<b>Statewide</b>	<b>27%</b>	<b>3.5</b>	<b>0.8</b>	<b>0.69</b>